

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions of claims in the application.

1. (Previously Presented) A method of separating a negatively charged target biopolymer from other biopolymers which are not negatively charged or which are larger than said target biopolymer, comprising the steps of:

partitioning a container into a first area and a second area-with the use of a partition;

filling said first area with a first solution;

filling said second area with a second solution;

injecting said target biopolymer and other biopolymers into said first solution in said first area;

moving said target biopolymer from within said first solution in said first area, through said partition, and into said second solution in said second area using electrophoresis; and

preserving said target biopolymer in said second solution in said second area,

wherein said partition is a gel, a pillar array or a porous filter,

wherein said target biopolymer is a nucleic acid or protein, and

wherein said other biopolymers are nucleic acids and/or proteins.

2. (Currently Amended) A method of separating a negatively charged target biopolymer from other biopolymers which are smaller than said target biopolymer, comprising the steps of:

partitioning a container into a first area, a second area and a third area with the use of a

partition;

filling said first area with a first solution;

filling said second area with a second solution;

filling said third area with a third solution;

injecting said target biopolymer and other biopolymers into said first solution in said first area;

moving said other biopolymers from within said first solution in said first area, through said partition and into said second solution in said second area using a first electrophoresis device generating a first electric field,

moving said target biopolymer from within said first solution in said first area into said partition using said first electrophoresis device, then

moving said target biopolymer from within said partition into said third solution in said third area using a second electrophoresis device generating a second electric field; and

preserving said target biopolymer in said third solution in said third area,

wherein said target biopolymer is a nucleic acid or protein,

wherein said first electric field and said second electric field are perpendicular, and

wherein said other biopolymers are nucleic acids and/or proteins.

3. (Previously Presented) The biopolymer separation method of claim 2, wherein said partition is a gel, a pillar array or a porous filter.

4-6. (Cancelled)

7. (Previously Presented) A biopolymer separation method, wherein a negatively charged target biopolymer fixed to a magnetic bead is separated from other biopolymers, comprising the steps of:

partitioning a container into a first area, a second area, and a third area with the use of a partition;

filling said first area with a first solution;

filling said second area with a second solution;

filling said third area with a third solution;

injecting said target biopolymer and other biopolymers into said first solution in said first area;

moving said target biopolymer fixed to said magnetic bead and said other biopolymers from within said first solution in said first area into said partition using electrophoresis; and

while said target biopolymer fixed to said magnetic bead and said other biopolymers are in said partition, moving said target biopolymer fixed to said magnetic bead into said third solution in said third area using magnetophoresis; and

preserving said target biopolymer in said third solution in said third area,

wherein said target biopolymer is a nucleic acid or protein, and

wherein said other biopolymers are nucleic acids and/or proteins.

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8. (Previously Presented) The biopolymer separation method of claim 7, wherein said partition is a gel, a pillar array or a porous filter.

9-11. (Cancelled)